

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

<b>In the Matter of Empire District Electric )</b>	
<b>Company's 2010 Filing Pursuant to )</b>	<b>File No. EO-2011-0066</b>
<b>4 CSR 240 -22 Electric Utility )</b>	
<b>Resource Planning )</b>	

**NONUNANIMOUS STIPULATION AND AGREEMENT**

Pursuant to 4 CSR 240-22.080(8), The Empire District Electric Company ("Empire" or "Company"), the Staff of the Missouri Public Service Commission ("Staff"), the Office of the Public Counsel ("OPC"), the Missouri Department of Natural Resources ("MDNR"), and Dogwood Energy, LLC ("Dogwood") (collectively, the "Signatories") hereby submit to the Missouri Public Service Commission ("Commission") this Stipulation and Agreement ("Agreement") to remedy all alleged deficiencies and concerns expressed by the non-Empire Signatories in this case.

The agreements set forth in this Agreement apply to Empire's September 2010 Chapter 22 compliance filing ("September 2010 filing") and to Empire's next Chapter 22 triennial compliance filing, scheduled for April 1, 2013 ("April 2013 filing"). All references to Chapter 22 provisions in this Agreement are to the Chapter 22 rules that were in place at the time of Empire's September 2010 filing. All references to revised Chapter 22 rules in this Agreement are to the Commission's Chapter 22 rules which become effective as a result of the rulemaking process in File No. EX-2010-0254.

In support hereof, the Signatories offer as follows:

**BACKGROUND**

1. On February 26, 2010, Empire requested variances and clarifications from the Chapter 22 rules in File No. EE-2010-0246. The Commission issued an Order Granting Application for Variance in the same case on June 16, 2010. On September 3, 2010, Empire submitted its September 2010 filing in File No. EO-2011-0066.
2. On January 3, 2011, Staff, MDNR, and Dogwood submitted reports identifying alleged deficiencies and concerns with Empire's September 2010 filing.
3. 4 CSR 240-22.080(8) provides that if the Staff, OPC or any intervenor finds deficiencies in a utility's filing, they shall work with the electric utility and the other parties in an attempt to reach a joint agreement on a plan to remedy the identified deficiencies. The parties have worked together to develop such a joint agreement, and those efforts have resulted in this Agreement.
4. MDNR identified 33 alleged deficiencies in Empire's September 2010 filing and for several of these deficiencies proposed that Empire be required to revise aspects of its September 2010 filing. Staff identified eight alleged deficiencies and three concerns, while Dogwood identified four alleged deficiencies/concerns.

#### **AGREEMENTS**

5. The "effective date" of the Missouri Energy Efficiency Investment Act of 2009, § 393.1075, RSMO, Supp. 2009, ("MEEIA") rules (proposed rules 4 CSR 240-3.163, 4 CSR 240-3.164, 4 CSR 240-20.093 and 4 CSR 240-20.094) is defined as the date thirty days after the publication of the MEEIA rules in the Code of State Regulations, unless specified as a later date by the Commission, for purposes of this agreement. This definition will apply to all references to the effective date of the Commission's MEEIA

rules in this document and in Appendix A. This reference is intended only to identify specific provisions of the presently-proposed rule and is not intended to express any position with respect to any judicial review or any other actions regarding the presently-proposed rules or any result thereof.

6. Where work papers or data request responses include models or spreadsheets or similar information originally in a commonly available format where inputs or parameters may be changed to observe changes in inputs, if available in that original format, the party providing the work paper or response shall provide this type of information in that original format with formulas intact. All parties shall provide its work papers to the Signatories in electronic format by e-mailing or by delivery of a compact disk or other electronic storage media. However, if such materials from outside consultants are proprietary, the parties agree to discuss whether it is necessary to produce those materials and, if so, the appropriate handling of the materials before the information is provided.
7. The Signatories anticipate that the filing schedule in the Commission's revised Chapter 22 subsection 4 CSR 240-22.080(1) will require Empire to file its next Chapter 22 triennial compliance filing by April 1, 2013. The Signatories agree that there is not adequate time prior to the anticipated April 1, 2013 filing date to resolve all of Empire's September 2010 filing's alleged deficiencies through a revised filing in this case and to allow the Signatories adequate time to focus their attention and efforts on Empire's next Chapter 22 triennial compliance filing. The Signatories agree to focus their time and resources on Empire's next Chapter 22 triennial compliance filing, provided that Empire agrees to the following:

- a. As specified in Paragraph 8, Empire agrees to confer with the other Signatories in a Stakeholder Advisory Group process on specific aspects of the Commission's revised Chapter 22 rules and associated documentation for purposes of the April 2013 filing as set out in this Agreement;
- b. As specified in Paragraph 9, Empire agrees to work with the Stakeholder Advisory Group to request the Commission's approval to implement new demand-side programs, including the demand-side programs in Empire's preferred resource plan in the September 2010 filing, after the effective date of the Commission's MEEIA rules;
- c. As specified in Paragraph 12, Empire reaffirms that specific provisions from File No. EE-2010-0246 shall apply to its April 2013 filing;
- d. As specified in Paragraph 13, Empire agrees to consider and incorporate relevant provisions of the Commission's MEEIA rules into its development of planning objectives and resource acquisition strategy for its April 2013 filing; and,
- e. Empire agrees to the additional provisions specified in this Agreement that are intended to resolve allegations of deficiencies and concerns that the non-Empire Signatories identified in Empire's September 2010 filing and prevent those types of alleged deficiencies in Empire's April 2013 filing.

The Commission's Chapter 22 process is designed to produce a Company endorsed resource acquisition strategy. In order for the resource planning process to be meaningful, it must reflect the input of, and be endorsed by, Empire's management. By signing this Agreement, Empire verifies management's endorsement of this Agreement.

8. As referenced in Paragraph 7.a., Empire agrees to undertake the Stakeholder Advisory Group process set out in this Agreement. The Stakeholder Advisory Group process is intended to assist Empire in its selection of analytic methods and to facilitate Empire's collection and use of new data for its April 2013 filing. The Stakeholder Advisory Group shall fulfill the stakeholder group functions set forth in 4 CSR 240-22.050(3)(F) and 4 CSR 240-22.080(5) of the Commission's revised Chapter 22 rules and any additional functions set forth in this agreement. The members of the Stakeholder Advisory Group shall be the Signatories to this Agreement, and other entities that join pursuant to other agreement or law, including 4 CSR 240-22.020(56) of the Commission's revised Chapter

22 rules. Parties to File Nos. ER-2011-0004 and EO-2011-0066 shall have the opportunity to elect to join the Stakeholder Advisory Group. The Signatories agree to show good faith in working to resolve any and all outstanding issues as they arise. The Signatories further agree to the schedule of the Stakeholder Advisory Group activities set out in Appendix A, "Stakeholder Advisory Group Process Agreement." The Stakeholder Advisory Group process outlined in Appendix A is not intended to be an exhaustive list of the issues to be addressed by the Stakeholder Advisory Group. The Stakeholder Advisory Group process will address methodological and documentation issues in the following five (5) areas:

- a. Empire's load analysis and load forecast;
  - b. Empire's screening and integrated resource analysis of supply-side resources, including resource options related to compliance with environmental regulation and including customer-sited combined heat and power ("CHP") installations;
  - c. Empire's screening and integrated resource analysis of energy efficiency and demand response resources;
  - d. Empire's analysis of uncertain factors and risk analysis; and
  - e. Empire's planning objectives and contingency planning.
9. As referenced in 7.b., the Signatories agree to the following provisions with respect to planning and implementation of new demand-side programs during the period between the effective date of this Agreement and Empire's anticipated April 2013 filing. This period will be referred to as the "interim period":
- a. New demand-side programs whose implementation was described during the interim period in the September 2010 filing include (1) an ENERGY STAR® washing machine rebate program, (2) a Residential High Efficiency Lighting program, and (3) a Home Energy Comparison Reports program.
  - b. As referenced in Paragraph 7.b., to augment the demand-side resource portfolio contained in the resource acquisition strategy in the September 2010 filing, three additional demand-side programs will be considered. These programs are a refrigerator recycling program, an ENERGY STAR® refrigerator rebate program and a pilot ENERGY STAR® dehumidifier rebate program.

- c. Empire will, unless advised otherwise by at least two non-utility members of the Stakeholder Advisory Group, request the Commission's approval of: 1) the demand-side programs identified in Paragraphs 9.a. and 9.b., except as described in part 9.d., and 2) a demand-side programs investment mechanism ("DSIM") within nine months of the effective date of the Commission's MEEIA rules during the interim period.
  - d. If the revised ENERGY STAR® dehumidifier standard has not been published at the time specified in Paragraph 9.c., then the pilot ENERGY STAR® dehumidifier rebate program shall be considered at a later time than the other demand-side programs listed in Paragraphs 9.a. and 9.b. Empire, in consultation with the Stakeholder Advisory Group, shall consider this program for implementation during the interim period, within three months following the publication by the U.S. Environmental Protection Agency's revised standard for ENERGY STAR® dehumidifiers.
  - e. Alternative Demand-Side Programs Cost Recovery Mechanism: In the event the cost recovery provisions of the MEEIA rules are not in effect, the parties will support a reasonable request for an Accounting Authority Order authorizing the Company to accumulate the costs associated with new demand-side programs in regulatory asset accounts as the program(s) costs are incurred, unless a mechanism concerning these costs is established in File No. ER-2011-0004. The amortization of these deferred program costs and the recovery of these deferred program costs from the Company's customers, if not later addressed by a DSIM, shall be addressed in the Company's subsequent electric general rate proceeding.
10. Empire shall engage a contractor to assist it in conducting the potential study to be used in the April 2013 filing as described in Appendix A, paragraph 16, and the design of any DSM programs that stem from the study. Among the possible program designs, Empire will include the following additional programs mentioned at the October 20, 2010 IRP meeting held in Jefferson City:
- i. Residential Building Shell Thermal Measures;
  - ii. Residential New Construction Measures;
  - iii. Commercial/Industrial Retrofit program;
  - iv. Future Lighting Programs.
- a. Prior to requesting Commission approval of new demand-side programs, including new demand-side programs identified in Paragraph 9.a. and 9.b., Empire agrees to confer with the Stakeholder Advisory Group concerning program participation levels, design and implementation at least quarterly.
11. The Signatories agree to the following provisions with respect to Empire's existing demand-side programs. Empire shall consult with the Stakeholder Advisory Group concerning the future of Empire's existing portfolio of energy efficiency programs under MEEIA or the Commission's MEEIA rules. If Empire determines, in consultation with the Stakeholder Advisory Group, that a continuation or modification of any or all of the

existing programs is warranted, Empire shall file for approval of the such programs and for approval of a DSIM under the MEEIA or the Commission's MEEIA rules within nine (9) months of the effective date of the Commission's MEEIA rules. Empire agrees to work with the Stakeholders Advisory Group and a demand-side consultant, if necessary, to analyze the levels of participation and the incentive levels for each of Empire's existing demand-side programs and develop a plan that will maximize the savings attributable to each program while maintaining Total Resource Cost levels of 1.0 or greater.

12. As referenced in Paragraph 7.c., Empire agrees that the following provisions, to which it agreed in File No. EE-2010-0246, shall apply to its April 2013 filing:

- a. Paragraph 5, Empire/MDNR Joint Statement of Position and Agreed Language Regarding Economic Variables, May 4, 2010, File No. EE-2010-0246:

Empire agrees to provide full disclosure of its load forecasting methodology, to include a description of all assumptions, equations and the rationale for any decisions made concerning any adjustments made to the data used to develop the forecast. As one aspect of this disclosure, Empire will describe any assumptions concerning future economic conditions that influenced or were incorporated into the company's specification or assignment of values to variables, coefficients or relationships in the equations used to forecast load over the 20-year planning horizon. Empire will provide all work papers supporting the IRP load forecast when it is completed. In addition, Empire's IRP load forecast work papers will be provided to MDNR in an electronic format.

- b. Staff's Recommendation to Grant Variances and Clarification Requested by Empire For its 2010 Electric Resource Planning Submission, March 31, 2010, File No. EE-2010-0246, Paragraph 30:

This outlines Empire's prior agreement with Staff to develop a plan addressing the feasibility of changing the Company's forecasting method for the IRP filing that will follow the September 2010 filing. This plan will include a proposed time line and cost estimate that can be used for further discussions. The plan will consider the use of economic variables; forecasting at the class cost of service level; and the requirements in the Load Analysis and Forecasting rule that will be in place at the time of the IRP filing that is subsequent to the September 2010 filing.

13. As referenced in Paragraph 7.d., Empire agrees to consider and incorporate the following into its planning and development strategy for demand-side resources:

- a. The MEEIA rules;
- b. Section 393.1075, RSMo Supp. 2009, Paragraph 4 - Empire shall incorporate a goal of achieving all cost-effective demand-side savings as an explicit planning objective and 4 CSR 240-20.094(2)(A) and (B) shall be used as a guideline to review progress toward an expectation that Empire's demand-side programs can achieve a goal of all cost-effective demand-side savings;
- c. A current market potential study. The current market potential study shall use primary data and analysis for the utility's service territory. The determination of whether to conduct a market potential study for the utility's service territory or for all statewide investor-owned electric utilities shall be at the discretion of the electric utility. If the current market potential study of the electric utility that is filing for approval of demand-side programs or a demand-side program plan is part of a statewide investor-owned electric utilities market potential study, the sampling methodology shall reflect each utility's service territory and shall provide statistically significant results for that utility. To the extent that primary data for each utility service territory is unavailable or insufficient, the market potential study may also rely on or be supplemented by data from secondary sources and relevant data from other geographic regions. The current market potential study shall be prepared by an independent third party with opportunities for commission staff and stakeholder review and input in the planning stages of the analysis including review of assumptions and methodology in advance of the performance of the study, and shall include at least the following:
  1. Complete documentation of all assumptions, definitions, methodologies, sampling techniques, and other aspects of the current market potential study;
  2. Clear description of the process used to identify the broadest possible list of measures and groups of measures for consideration;
  3. Clear description of the process used to determine technical potential, economic potential, maximum achievable potential, and realistic achievable potential for a twenty (20)-year planning horizon for major end-use groups (e.g., lighting, space heating, space cooling, refrigeration, motor drives, etc.) for each customer class; and
  4. Identification and discussion of the twenty (20)-year baseline energy and demand forecasts. If the baseline energy and demand forecasts in the current market potential study differ from the baseline forecasts in the utility's most recent 4 CSR 240-22 triennial compliance filing, the current market potential study shall provide a comparison of the two (2) sets of forecasts and a discussion of the reasons for any differences between the two (2) sets of forecasts. The twenty (20)-year baseline energy and demand forecasts shall account for the following:
    - A. Discussion of the treatment of all of the utility's customers who have opted out;
    - B. Changes in building codes and/or appliance efficiency standards;



- C. Changes in customer combined heat and power applications; and
- D. Third party and other naturally occurring demand-side savings.

#### **4 CSR 240-22.010 Policy Objectives**

14. MDNR Load Forecast ("LF") Alleged Deficiency #1 states MDNR's view that Empire's load forecast is not credible and that this shortcoming constitutes a deficiency that would cause the utility's resource acquisition strategy to fail to meet the requirements identified in 4 CSR 240-22.010(2)(A)–(C). To resolve the alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
15. MDNR Demand-Side Management ("DSM") Alleged Deficiency #1 states MDNR's view that Empire's filing has not met the requirement in 4 CSR 240-22.010(2) to "consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process." MDNR additionally cites §22.060(4)(D), §22.060(3) and §22.070(2)(K) related to this requirement. To resolve the alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

#### **4 CSR 240-22.030 Load Analysis and Forecasting**

16. Staff's Concern A states: Lack of underlying economic data weakens confidence in the load analysis and load forecasts and is the primary driver for the total number of variances from 4 CSR 240-22.030. Although Empire had waivers in this area (File No. EE-2010-0246), in order to resolve this concern, Empire agrees to address this issue in

the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

17. Staff's Concern B states: Empire's energy and demand load forecasts' growth rates seem high when considering (1) expectations for the current economic recession, and (2) energy and demand load forecasts' growth rates of other Missouri electric utilities. To resolve this concern, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
18. MDNR-LF-Alleged Deficiency #2 states that Empire's base case forecast is overly optimistic in its expectation of future load growth. In addition, MDNR alleges that the Company's support for its assumptions and statistical models is insufficient. Support for these statements appears in pages 8-19 of the GDS consultant report that MDNR submitted with its January 3, 2011 comments. (§22.030(8)(H)). To resolve the alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
19. MDNR-LF-Alleged Deficiency #3 states that the support for Empire's development of its high case and low case load forecasts is unclear and inadequate. In addition, MDNR alleges that the basis for the high case and low case load forecasts appears to be biased toward stronger growth than can be supported by Empire's analysis. Support for these statements appears in the GDS report. (§22.030(7), §22.060(3), §22.070(2)(A)). To resolve the alleged deficiency, Empire agrees to address this issue in the Stakeholder

Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

20. MDNR-LF-Alleged Deficiency #4 states that in preparing its load forecast, Empire has not considered economic or demographic drivers other than customer growth. In addition, MDNR alleges that Empire has not taken into account changes in the price of electricity, price of competitive energy sources, or personal income. Nor has Empire completed the utility analysis required by §22.030(8)(C). MDNR additionally cites the requirements of §22.030(5)(B)(2)(A), §22.030(6), §2.060(4)(C) and §22.030(8)(C). Although Empire had Commission approved waivers in this area for its September 2010 filing, in order to resolve the alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
21. The resolution of the load forecast deficiencies alleged in Paragraphs 16, 17 and 18 is based in part on the provisions for a feasibility study set forth in Paragraphs 11.b. and 21 of this Agreement and on the Stakeholder Advisory Group's involvement in reviewing and providing recommendations based on the feasibility study. The consultant's tasks will include identifying feasible alternatives for revising the forecast methodology to incorporate economic and demographic variables into the load analysis and forecasting. Empire agrees to conduct a feasibility study about changing the load analysis and forecasting methodology described in paragraph 12 of this Agreement for the April 2013 filing and to present the findings to the Stakeholder Advisory Group. A consultant will be involved in the feasibility study. Decisions on revisions to the load analysis and forecasting methodology and how the load analysis and forecasting is eventually

conducted will be guided by the results of the feasibility study and the Stakeholder Advisory Group.

22. In addition to the requirements of the load analysis and forecasting feasibility study outlined in Paragraph 11 and 20 of this Agreement, the load analysis and forecasting feasibility study will review internal and external data sources for their adequacy and appropriateness and provide an analytic structure and statistical model that will allow Empire to produce a set of load forecasts. The resulting statistical model should at a minimum control for multicollinearity and autocorrelation, use a standard set of statistical tests, and provide a robust estimate of the load forecasts' error bands over the 20-year planning horizon. The results of Empire's load forecasts will also be compared to load forecasts made by other electric utilities, both within and outside Missouri to the extent those forecasts are publicly available.

#### **4 CSR 240-22.040 Supply-Side Resource Analysis**

23. MDNR-Supply-Alleged Deficiency #1 states that Empire did not fully consider options for alternative supply side resources. Specifically, MDNR suggests that:
  - a. Utility scale photovoltaic ("PV") options were not considered in the utility's supply-side resource analysis. Empire's treatment of biomass options is very limited;
  - b. In addition, a more thorough analysis of both PV and biomass generation should have been performed. (§22.040(1)); and,
  - c. Volume 4 does not document any screening of utility-scale CHP installations; nor does Volume 3 document any screening of customer-based CHP installation.
24. MDNR-Supply-Alleged Deficiency #2 states that Empire did not document the accuracy of its fuel price forecasts and alleges that Empire has provided no evidence that it has

considered the accuracy of previous fuel price forecasts prepared by Ventyx as a criterion for selecting that firm as a provider of fuel price forecasts. While the utility relied on Ventyx for most fuel prices, it also relied on EIA for coal data. Thus, MDNR suggests that Empire also needs to consider EIA assumptions and examine its use (or non-use) of the EIA alternative cases when complying with applicable Chapter 22 rules (specifically with 4 CSR 240-22.040(5)(A)).

25. MDNR-Supply-Alleged Deficiency #3 states that Empire did not document critical uncertain factors related to fuel prices. Furthermore, MDNR alleges that Empire has not provided sufficient documentation related to how each fuel price forecast was prepared, nor has Empire clearly identified the critical uncertain factors that drive the fuel price forecasts (from Ventyx and the EIA) and the range of forecasts it has offered. (§22.040(8)(A)(2)).
26. In order to resolve the alleged deficiencies in Paragraphs 23-25, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing. The focus of the Stakeholder Advisory Group concerning this issue will be to assure that the screening process considers the full range of possible supply sources including utility-scale and customer-sited renewable and distributed generation; and to assure the reliability of base, high and low projections for inputs such as fuel prices.
27. Dogwood identifies issues with the information Empire relies upon in evaluating supply-side solutions to future capacity needs. To resolve these issues, Empire agrees to address the subject in the Stakeholder Advisory Group process used in the development of its April 2013 filing as set out in Appendix A (discussion to be completed with other supply-side screening discussions) and to effectively evaluate PPA alternatives. Dogwood

identifies issues regarding integration and reliability associated with use of intermittent generation. To resolve these issues, Empire agrees to address the subject in the Stakeholder Advisory Group process used in the development of its April 2013 filing as set out in Appendix A (discussion to be completed with other supply-side screening discussions) and to explicitly address it in the April 2013 filing.

#### **4 CSR 240-22.050 Demand-Side Resource Analysis**

28. Staff's Alleged Deficiency #1 states: Empire did not develop its initial estimates of demand-side programs' load impacts based on the best available information from in-house research, vendors, consultants, industry research groups, national laboratories or other credible sources – 4 CSR 240-22.050(7)(A)1. To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
29. Staff's Alleged Deficiency #2 states: Empire has not complied with the requirement in the May 12, 2010, Stipulation and Agreement in its most recent general rate case, File No. ER-2010-0130, to analyze a moderate (1%) DSM portfolio and an aggressive (2%) DSM portfolio in its 2010 IRP compliance filing. To remedy this concern, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Paragraph 32 of this agreement.
30. Staff's Alleged Deficiency #3 states: Empire did not identify, develop or screen the technical potential of end-use measures for residential and small commercial rate structures to achieve demand savings – 4 CSR 240-22.050(1). To remedy this concern,

Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

31. MDNR-DSM-Alleged Deficiency #2 states that Empire failed to conduct a bottom-up demand-side analysis as prescribed in 4 CSR 240-22.050, which prescribes that the utility shall identify a reasonably comprehensive set of demand-side measures, screen these measures based on prescribed tests, combine measures that pass screening into programs that are designed according to best practices, screen the programs and incorporate all programs that are found to be cost-effective into at least one alternative resource plan. A critical aspect of the bottom-up approach to program screening is estimating program participation (§22.050(7)(A)). MDNR alleges that Empire placed severe budget constraints on the estimate of program participants, contrary to the provisions and intent of the rule. To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
32. MDNR-DSM- Alleged Deficiency #3 states that Empire failed to honor its agreement in File ER-2010-0130 to model and fully analyze two demand-side management program portfolios (moderate and aggressive), with a goal of achieving annual electric energy (sales) and demand savings (peak) equivalent to 1% by 2015 and 2% by 2020. In its April 2013 filing, Empire agrees to model and fully analyze two demand-side management program portfolios with a goal of achieving annual electric energy (MWh) and demand savings (MW) equivalent to 1% by 2015 and 2% by 2020. The calculation of these savings shall be based on the methodology described in Appendix A, Paragraph

17. "Fully analyze" means the two demand-side alternative portfolios (moderate and aggressive), will be analyzed to the same level of detail as the other alternate plans considered in the April 2013 filing. This includes the same treatment during integrated resource analysis and risk analysis and the calculation of required performance measures. These two alternative resource plans will be analyzed in addition to any plans required by the Commission's revised Chapter 22 rules. If the alternative resource plan based on maximum achievable potential that is required by 4 CSR 240-22.050 of the Commission's revised Chapter 22 rules is sufficiently similar to one of the alternative resource plans required in this paragraph, the maximum achievable potential resource plan may substitute for one of the plans required in this paragraph.
33. MDNR-DSM-Alleged Deficiency #4 states MDNR's concern that the demand-side potential study filed by Empire imposes an arbitrary budget constraint on its estimates of maximum achievable potential, contrary to standard industry analytic practice. MDNR states that as a result, the potential study is materially deficient in that it fails to address the amount of cost-effective demand-side savings that could be obtained in Empire's Missouri service territory. To resolve this concern and alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
34. MDNR-DSM-Alleged Deficiency #5 states MDNR's concern that the load reductions from demand-side savings being considered in Empire's demand-side and integrated resource analysis are significantly lower than those achieved in a number of other jurisdictions and that these comparisons raise doubts concerning the credibility of Empire's effort to fulfill the goal stated in MEEIA (§393.1075.4 RSMo) of "achieving all



cost-effective demand-side savings." To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

35. MDNR-DSM-Alleged Deficiency #6 states MDNR's concern that Empire's demand-side portfolio does not include any programs directed at consumer electronics or plug loads, nor does it include any programs directed at residential lighting after 2017. To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing as set out in Appendix A.
36. MDNR-DSM-Alleged Deficiency #7 states that Empire has not provided details of any analysis of interactive effects conducted within the technical potential study as required by 4 CSR 240-22.050(6)(B). To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
37. MDNR-DSM-Alleged Deficiency #8 states that Empire failed to perform a stand-alone Probable Environmental Benefits Test to screen end-use measures as required by 4 CSR 240-22.050(3)(G). To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
38. MDNR-DSM-Alleged Deficiency #9 states that Empire failed to estimate the technical potential of each end-use measure that passes the probable environmental benefits screening test. (4 CSR 204-22.050(4)). This issue is resolved by Empire's agreement to address this issue in the stakeholder process used in the development of its April 2013 filing and set out in Appendix A. Empire agrees to provide supporting calculations and

assumptions to the other non-Empire Signatories following guidelines that will be developed in the Stakeholder Advisory Group process as set out in Appendix A.

39. MDNR–DSM-Alleged Deficiency #10 states that Empire has not provided any worksheets or other documentation that show the assumptions made or how it developed its assessment of the technical, economic, maximum achievable and realistic achievable potential levels for energy and demand savings. To resolve this alleged deficiency, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing as set out in Appendix A
40. MDNR-DSM-Alleged Deficiency #11 states that the general delivery plan for the new DSM programs in the filing is not comprehensive and does not provide the information required to develop a detailed marketing plan as set out in 4 CSR 240-22.050(6)(D). This issue is resolved by Empire's agreement, in consultation with the Stakeholder Advisory Group, to request Commission approval of new demand-side programs and for approval of a DSIM under the MEEIA or the Commission's MEEIA rules as set out in Paragraph 9 of this Agreement and Appendix A
41. MDNR-DSM-Alleged Deficiency #12 states that the evaluation plans described at the end of each program summary in Volume IV of the September 2010 filing are not adequate for the purpose of conducting process or impact evaluation plans of the demand-side programs associated with its preferred resource plan as set out in 4 CSR 240-22.050(9). This issue is resolved by Empire's agreement in consultation with the Stakeholder Advisory Group to request Commission approval of new demand-side programs and for Commission approval of a DSIM under the MEEIA or the

Commission's MEEIA rules as set out in Paragraph 9 of this Agreement and Appendix A.

42. MDNR-DSM-Alleged Deficiency #13 states that Empire has not clearly defined whether residential tenants and commercial lessees are eligible to participate in its DSM programs. (§22.050(1)(B)). To resolve this issue, Empire agrees to address the issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing as set out in Appendix A.
43. MDNR-DSM-Alleged Deficiency #14 states that although Empire did consider residential solar photovoltaic and wind renewable energy programs in its technical potential analysis, the Company's analysis is deficient in that the same measures were not considered in the commercial and industrial sector analysis. (§22.050(1)(D)). To resolve this issue, Empire agrees to address the issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing as set out in Appendix A.
44. MDNR-DSM-Alleged Deficiency #15 states that it is not clear that Empire has performed any sensitivity analysis related to utility marketing and delivery costs for demand-side programs. (§22.070(2)(L)). To resolve this issue, Empire agrees to address the issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and meet the requirements set out in Appendix A.
45. MDNR-DSM-Alleged Deficiency #16 states that Empire has not provided any worksheets or other documentation that show the assumptions or how it developed its assessment of the technical, economic, maximum achievable and realistic achievable potential levels for energy and demand savings. To resolve this alleged deficiency, Empire agrees to address this documentation issue in the Stakeholder Advisory Group

process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

46. MDNR-DSM-Alleged Deficiency #17 states MDNR's concern that in the demand-side portfolios developed by Empire, demand-side programs directed to the different customer sectors do not appear to be balanced. In particular, no demand-side savings are available in the commercial and industrial sectors until 2015. To resolve this alleged deficiency, Empire agrees to review the customer sector balance of its DSM portfolios in the Stakeholder Advisory Group process used in the development of its April 2013 filing.

#### **4 CSR 240-22.060 Integrated Resource Analysis**

47. Staff's Alleged Deficiency #4 states: Empire did not treat supply-side and demand-side resources on a logically consistent and economically equivalent basis - 4 CSR 240-22.060(4)(D). To resolve this issue, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
48. Staff's Alleged Deficiency #5 states: Empire did not design its alternative resource plans to satisfy the 4 CSR 240-22.010(2)(A) objective to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process per 4 CSR 240-22.060(1). To resolve this issue, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
49. Staff's Alleged Deficiency #6 states: Empire has not complied with MEEIA by not valuing demand-side investments equal to traditional investments in supply and delivery

infrastructure. To resolve this issue, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.

#### **4 CSR 240-22.070 Risk Analysis and Strategy Selection**

50. Staff's Alleged Deficiency #7 states: Empire did not conduct a preliminary sensitivity analysis of the uncertain factors listed in the rule - 4 CSR 240-22.-070(2). To resolve this issue, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
51. Staff's Alleged Deficiency #8 states: Empire's preferred resource plan does not meet the MEEIA goal of achieving all cost-effective demand-side savings. To resolve these issues, Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
52. MDNR alleged the following Deficiencies and Remedies related to Empire's analysis of uncertain factors and risk analysis:
  - a. MDNR-Risk-Alleged Deficiency #1: Failure to consider Customer Count as an Uncertain Factor;
  - b. MDNR-Risk- Alleged Deficiency #2: Failure to Test Smart Grid Development;
  - c. MDNR-Risk- Alleged Deficiency #3: Failure to Test Other Possible Candidates for Critical Uncertain Factors;
  - d. MDNR-Risk- Alleged Deficiency #4: Inadequate Testing of Energy Efficiency Resource Standard;
  - e. MDNR- Risk- Alleged Deficiency #5: Failure to Test Uncertain Factors Using Sensitivity Analysis;
  - f. MDNR-Risk- Alleged Deficiency #8: Failure to Explain Aggregation of Uncertain Factors (Concern); and,

- g. MDNR-Risk- Alleged Deficiency #9 - Critical Uncertain Factors too broadly Defined (Concern).

53. To resolve these issues, Empire agrees to address these issues in the Stakeholder Advisory Group process used in the development of its April 2013 filing. The Stakeholder Advisory Group Process will review and consider the more detailed statement of these issues that are presented in the comments filed by MDNR on January 3, 2011. Empire agrees to conduct and report on an extensive review of uncertain factors for submission to a quantitative sensitivity analysis to identify critical uncertain factors, such as those required in revised Chapter 22 at 4 CSR 240-22.060(6)(C).<sup>1</sup> Empire agrees to take special care in this analysis to identify the interactions and correlations between critical uncertain factors. MDNR alleged the following Deficiencies related to Empire's contingency planning:

- a. MDNR-Risk-Alleged Deficiency #6: Failure to Identify Limits of Preferred Plan; and,
- b. MDNR-Risk-Alleged Deficiency #7: Failure to Identify Contingency Options.

To resolve these issues, Empire agrees to address these issues in the Stakeholder Advisory Group process used in the development of its April 2013 filing. The Stakeholder Advisory Group Process will review and consider the more detailed statement of these issues that are presented in the comments filed by MDNR on January 3, 2011. The Stakeholder Advisory Group will review the requirements of revised Chapter 22 rules and advise Empire regarding Empire's meeting the full range of these

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<sup>1</sup> 4 CSR 240-22.060(6)(C): The utility shall describe and document its assessment of the potential uncertainty associated with the load impact estimates of the demand-side candidate resource options or portfolios. The utility shall estimate – 1. The impact of the uncertainty concerning the customer participation levels by estimating and comparing the maximum achievable potential and realistic achievable potential of each demand-side candidate resource option or portfolio; and 2. The impact of uncertainty concerning the cost effectiveness by identifying uncertain factors affecting which end-use resources are cost effective. The utility shall identify how the menu of

requirements. “Contingency planning” includes developing methods of assessing the interaction of critical uncertain factors, developing realistic estimates of the impact of extreme events on Empire’s load forecast, and developing a monitoring plan.

54. Dogwood-Covariant Risk Concern- Although it is not expressly a part of the Chapter 22 rules, Dogwood identifies issues regarding Empire’s lack of full consideration of covariant risks. Empire agrees to participate in industry meetings regarding best practices of covariant risk analysis and otherwise address the subject in the Stakeholder Advisory Group process used in the development of Empire’s April 2013 as set out in Appendix A.

#### **4 CSR 240-22.080 Filing Schedule and Requirements**

55. Staff’s Concern C: Alleges that Empire’s September 2010 filing is not organized around each of the sections and subsections within 4 CSR 240-22, which makes it difficult for stakeholders to review the filing for its compliance with the 4 CSR 240-22 rules. To resolve this issue Empire agrees to address this issue in the Stakeholder Advisory Group process used in the development of its April 2013 filing and to meet the requirements set out in Appendix A.
56. Dogwood identifies concerns about the degree to which information in Empire’s September 2010 filing is not either publicly available or subject to proprietary classification rather than highly confidential. To resolve this concern, Empire agrees to compare its September 2010 filing and the designation of highly confidential information to the highly confidential, proprietary and non-proprietary designation used by other

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cost effective end-use measures changes with these uncertain factors and shall estimate how these changes affect the load impact estimates associated with the demand-side candidate resource options.

Missouri utilities in their latest Chapter 22 compliance filings. Empire will further re-file its September 2010 IRP Executive Summary with revised confidentiality classifications within 30 days of the date of this Agreement.

**EFFECT OF NON-UNANIMOUS STIPULATION AND AGREEMENT**

57. None of the Signatories shall be deemed to have approved or acquiesced in any question of Commission authority, the interpretation of specific provisions of the Commission's Chapter 22 rule, the interpretation of compliance with specific provisions the Stipulation and Agreement reached in File No. ER-2010-0130, accounting authority order principle, cost of capital methodology, capital structure, decommissioning methodology, ratemaking or procedural principle, valuation methodology, cost of service methodology or determination, depreciation principle or method, rate design methodology, jurisdictional allocation methodology, cost allocation, cost recovery, or question of prudence, that may underlie this Nonunanimous Stipulation and Agreement, or for which provision is made in this Nonunanimous Stipulation and Agreement.
58. This Nonunanimous Stipulation and Agreement represents a negotiated settlement. Except as specified herein, the Signatories to this Nonunanimous Stipulation and Agreement shall not be prejudiced, bound by, or in any way affected by the terms of this Nonunanimous Stipulation and Agreement: (i) in any future proceeding; (ii) in any proceeding currently pending under a separate docket; and/or (iii) in this proceeding should the Commission decide not to approve this Nonunanimous Stipulation and Agreement, or in any way condition its approval of same.
59. This Nonunanimous Stipulation and Agreement does not constitute a waiver of any Signatory's rights regarding appeal of the Commission's MEEIA rules or any other



provision of law or limit those rights in any way. This Nonunanimous Stipulation and Agreement does not constitute a waiver of any Signatory's right to object to or oppose any filing or action made or taken by Empire, including filings or actions made or taken pursuant to this Nonunanimous Stipulation and Agreement. In the event that the Commission does not approve and adopt the terms of this Nonunanimous Stipulation and Agreement in total, or approves this Nonunanimous Stipulation and Agreement with modifications or conditions that a Signatory objects to, it shall be void and no Signatory shall be bound, prejudiced, or in any way affected by any of the agreements or provisions hereof.

60. When approved and adopted by the Commission, this Nonunanimous Stipulation and Agreement shall constitute a binding agreement between the Signatories hereto. The Signatories shall cooperate in defending the validity and enforceability of this Nonunanimous Stipulation and Agreement and the operation of this Nonunanimous Stipulation and Agreement according to its terms. Nothing in this Nonunanimous Stipulation and Agreement is intended to impinge, restrict or limit in any way any party's discovery powers, including the right to access information and investigate matters related to Empire.
61. This Nonunanimous Stipulation and Agreement does not constitute a contract with the Commission. Acceptance of this Nonunanimous Stipulation and Agreement by the Commission shall not be deemed as constituting an agreement on the part of the Commission to forego, during the term of this Nonunanimous Stipulation and Agreement, the use of any discovery, investigative or other power of the Commission. Thus, nothing in this Nonunanimous Stipulation and Agreement is intended to impinge or

restrict in any manner the exercise by the Commission, or of any Signatory, of any statutory right, including the right to access information, or any statutory obligation.

#### **COMMISSION APPROVAL**

62. If the Commission has questions for the Signatories, the Signatories will make available, at any on-the-record session, their experts/witnesses and attorneys so long as all Signatories have had adequate notice of that session. The Signatories agree to cooperate in presenting this Nonunanimous Stipulation and Agreement to the Commission for approval, and will take no action, direct or indirect, in opposition to the request for approval of this Nonunanimous Stipulation and Agreement.
63. The provisions of this Nonunanimous Stipulation and Agreement have resulted from extensive negotiations among the Signatories and the provisions are interdependent. If the Commission does not unconditionally approve this Nonunanimous Stipulation and Agreement without modification, and notwithstanding its provision that it shall become void thereon, neither this Nonunanimous Stipulation and Agreement, nor any matters associated with its consideration by the Commission, shall be considered or argued to be a waiver of the rights that any Signatory has to a hearing on the issues presented by the Nonunanimous Stipulation and Agreement, for cross-examination, or for a decision in accordance with Section 536.080 RSMo 2000 or Article V, Section 18 of the Missouri Constitution, and the Signatories shall retain all procedural and due process rights as fully as though this Nonunanimous Stipulation and Agreement had not been presented for approval, and any suggestions or memoranda, testimony or exhibits that have been offered or received in support of this Nonunanimous Stipulation and Agreement shall thereupon become privileged as reflecting the substantive content of settlement

discussions and shall be stricken from and not be considered as part of the administrative or evidentiary record before the Commission for any further purpose whatsoever.

64. In the event the Commission accepts the specific terms of this Nonunanimous Stipulation and Agreement without modification, the Signatories waive their respective rights to call, examine and cross-examine witnesses, pursuant to Section 536.070(2) RSMo 2000; their respective rights to present oral argument and written briefs pursuant to Section 536.080.1 RSMo 2000; their respective rights to the reading of the transcript by the Commission pursuant to Section 536.080.2 RSMo 2000; their respective rights to seek rehearing, pursuant to Section 386.500 RSMo 2000; and their respective rights to judicial review pursuant to Section 386.510 RSMo 2000. This waiver applies only to a Commission Report and Order respecting this Nonunanimous Stipulation and Agreement issued in this proceeding, and does not apply to any matters raised in any subsequent Commission proceeding, or any matters not explicitly addressed by this Nonunanimous Stipulation and Agreement.

WHEREFORE, the Signatories respectfully request the Commission accept this Nonunanimous Stipulation and Agreement and issue an order approving this Nonunanimous Stipulation and Agreement.

Respectfully submitted,

THE EMPIRE DISTRICT ELECTRIC COMPANY

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### **CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing have been mailed, hand-delivered, or transmitted by facsimile or electronic mail to all counsel of record this 1<sup>st</sup> day of April, 2010.

/s/ Sarah Kliethermes

The Empire District Electric Company  
**STAKEHOLDER ADVISORY GROUP PROCESS**  
Appendix A  
To Non-Unanimous Stipulation and Agreement

**STAKEHOLDER ADVISORY GROUP PROCESS**

1. The Signatories reserve the right to take any disputes concerning implementation of the action items related to this process and the Empire 2013 IRP to the Commission for resolution, by a filing in this docket, and all other remedies available under applicable law.
2. The Stakeholder Advisory Group will consist of the Signatories to the Agreement and other entities as set forth in Paragraph 8 of the NonUnanimous Stipulation and Agreement.
3. A general schedule for the Stakeholder Advisory Group activities and meetings is listed at Table A-2 at the end of this Appendix. The dates and times of the Stakeholder Advisory Group meetings will be determined by the Stakeholder Advisory Group but meetings shall be held no less frequently than quarterly.
4. Empire shall consult with the Stakeholder Advisory Group concerning its compliance with this Appendix in conformity with the schedule of activities set forth in Table A-2.

**Load Analysis and Forecast**

5. Following the review of a feasibility study designed to focus on changing the Company's load analysis and forecasting methodology for the April 2013 filing, the Stakeholder Advisory Group will advise Empire on the direction it should take in this area. The feasibility study will include input from a consultant. Information about this study is specified in Paragraphs 12b and 21 of the Non-Unanimous Stipulation and Agreement.

6. Empire shall document all assumptions, models and other inputs used by Empire or its consultants for developing the analysis and conclusions required to comply with Paragraph 5 of this Appendix. Empire shall provide the documentation to Signatories in a machine-readable format, when applicable, such as electronically readable spreadsheets, as specified in Paragraph 6 of the Non-Unanimous Stipulation and Agreement.

**Demand-Side Resource Analysis**

7. Empire shall contact other regulated electric utilities in Missouri, Kansas, Arkansas, and Oklahoma to discuss to the extent possible their demand-side management programs' design, and implementation issues and confer with the Stakeholder Advisory Group to develop program designs and practices that will support a successful implementation of the three additional programs provided in Paragraph 9 of the Non-Unanimous Stipulation and Agreement following approval of the programs under the MEEIA or the Commission's MEEIA rules.
8. Empire shall contact other electric and natural gas utilities in Missouri to discuss the potential for joint programs to deliver building shell thermal measures for residential customers with (1) natural gas utilities whose service territories overlap with Empire's and (2) electric utilities whose service territories are contiguous with Empire's, and confer with the Stakeholder Advisory Group regarding these discussions. Empire shall also evaluate the cost effectiveness of at least one joint program to deliver building shell thermal measures for residential customers in its April 2013 compliance filing.
9. Empire shall consult with the Stakeholder Advisory Group regarding entry into a contract with an outside evaluator to complete a process and impact evaluation of



each new demand-side program approved under the MEEIA or the Commission's MEEIA rules, after 12 – 24 months of full program operation.

10. In consultation with the Stakeholder Advisory Group, Empire shall oversee a consultant to produce a demand-side market potential study that results in estimates of technical, economic, realistic achievable potential (RAP) and maximum achievable potential (MAP) for energy (MWh) and demand (MW) savings in Empire's service territory that are not budget-constrained.
11. The analysis referenced in Paragraph 10 shall include but shall not necessarily be limited to a market potential study that at minimum meets the requirements of the MEEIA and the Commission's MEEIA rules. In consultation with the Stakeholder Advisory Group, Empire shall engage a qualified consulting firm to conduct this study. Empire shall solicit and consider input from the Stakeholder Advisory Group concerning the initial RFP and the project requirements. The Stakeholder Advisory Group shall determine a set of project milestones and shall be provided interim results when these milestones are reached. Empire shall provide the Stakeholder Advisory Group with information and consider the comments of the members of the Stakeholder Advisory Group on the methodology, progress and results of the study.
12. Empire shall consult with the Stakeholder Advisory Group about the creation of demand-side resource programs, the conduct of demand-side screening analyses, the construction of demand-side resource portfolios, and planning for demand-side resource implementation and evaluation. Estimates of program participation shall be an aspect of developing potential demand-side programs and subjecting them to cost effectiveness screening as under applicable law and as described below:

(3) The utility shall develop potential demand-side programs that are designed to deliver an appropriate selection of end-use measures to each market segment. The utility shall describe and document its potential demand-side program planning and design process which shall include at least the following activities and elements:

(A) Review demand-side programs that have been implemented by other utilities with similar characteristics and identify programs that would be applicable for the utility;

(B) Identify, describe, and document market segments that are numerous and diverse enough to provide relatively complete coverage of the major classes and decision-makers identified in subsection (1)(A) and that are specifically defined to reflect the primary market imperfections that are common to the members of the market segment;

(C) Identify a comprehensive list of end-use measures and demand-side programs considered by the utility and develop menus of end-use measures for each demand-side program. The demand-side programs shall be appropriate to the shared characteristics of each market segment. The end-use measures shall reflect technological changes in end-uses that may be reasonably anticipated to occur during the planning horizon;

(D) Assess how advancements in metering and distribution technologies that may be reasonably anticipated to occur during the planning horizon affect the ability to implement or deliver potential demand-side programs;

(E) Design a marketing plan and delivery process to present the menu of end-use measures to the members of each market segment and to persuade decision-makers to implement as many of these measures as may be appropriate to their situation. When appropriate, consider multiple approaches such as rebates, financing, and direct installations for the same menu of end-use measures;

(F) Evaluate, describe, and document the feasibility, cost reduction potential, and potential benefits of statewide marketing and outreach programs, joint programs with natural gas utilities, upstream market transformation programs, and other activities. In the event that statewide marketing and outreach programs are preferred, the utilities shall develop joint programs in consultation with the stakeholder group;

(G) Estimate the characteristics needed for the twenty (20)-year planning horizon to assess the cost effectiveness of each potential demand-side program, including:

1. An assessment of the demand and energy reduction impacts of each stand-alone end-use measure contained in each potential demand-side program;

2. An assessment of how the interactions between end-use measures, when bundled with other end-use measures in the potential demand-side program, would affect the stand-alone end-use measure impact estimates;

3. An estimate of the incremental and cumulative number of program participants and end-use measure installations due to the potential demand-side program;

4. For each year of the planning horizon, an estimate of the incremental and cumulative demand reduction and energy savings due to the potential demand-side program; and

5. For each year of the planning horizon, an estimate of the costs, including:

- A. The incremental cost of each stand-alone end-use measure;

B. The cost of incentives paid by the utility to customers or utility financing to encourage participation in the potential demand-side program. The utility shall consider multiple levels of incentives paid by the utility for each end-use measure within a potential demand-side program, with corresponding adjustments to the maximum achievable potential and the realistic achievable potential of that potential demand-side program;

C. The cost of incentives to customers to participate in the potential demand-side program paid by the entities other than the utility;

D. The cost to the customer and to the utility of technology to implement a potential demand-side program;

E. The utility's cost to administer the potential demand-side program; and

F. Other costs identified by the utility;

(H) A tabulation of the incremental and cumulative number of participants, load impacts, utility costs, and program participant costs in each year of the planning horizon for each potential demand-side program; and

(I) The utility shall describe and document how it performed the assessments and developed the estimates pursuant to subsection (3)(G) and shall provide documentation of its sources and quality of information.

(4) The utility shall develop potential demand-side rates designed for each market segment to reduce the net consumption of electricity or modify the timing of its use. The utility shall describe and document its demand-side rate planning and design process and shall include at least the following activities and elements:

(A) Review demand-side rates that have been implemented by other utilities and identify whether similar demand-side rates would be applicable for the utility taking into account factors such as similarity in electric prices and customer makeup;

(B) Identify demand-side rates applicable to the major classes and decision-makers identified in subsection (1)(A). When appropriate, consider multiple demand-side rate designs for the same major classes;

(C) Assess how technological advancements that may be reasonably anticipated to occur during the planning horizon, including advanced metering and distribution systems, affect the ability to implement demand-side rates;

(D) Estimate the input data and other characteristics needed for the twenty (20)-year planning horizon to assess the cost effectiveness of each potential demand-side rate, including:

1. An assessment of the demand and energy reduction impacts of each potential demand-side rate;

2. An assessment of how the interactions between multiple potential demand-side rates, if offered simultaneously, would affect the impact estimates;

3. An assessment of how the interactions between potential demand-side rates and potential demand-side programs would affect the impact estimates of the potential demand-side programs and potential demand-side rates;

4. For each year of the planning horizon, an estimate of the incremental and cumulative demand reduction and energy savings due to the potential demand-side rate; and

5. For each year of the planning horizon, an estimate of the costs of each potential demand-side rate, including:

A. The cost of incentives to customers to participate in the potential demand-side rate paid by the utility. The utility shall consider multiple levels of incentives to achieve customer participation in each potential demand-side rate, with corresponding adjustments to the maximum achievable potential and the realistic achievable potentials of that potential demand-side rate;

B. The cost to the customer and to the utility of technology to implement the potential demand-side rate;

C. The utility's cost to administer the potential demand-side rate; and

D. Other costs identified by the utility;

(E) A tabulation of the incremental and cumulative number of participants, load impacts, utility costs, and program participant costs in each year of the planning horizon for each potential demand-side program;

(F) Evaluate how each demand-side rate would be considered by the utility's Regional Transmission Organization (RTO) in resource adequacy determinations, eligibility to participate as a demand response resource in RTO markets for energy, capacity, and ancillary services; and

(G) The utility shall describe and document how it performed the assessments and developed the estimates pursuant to subsection (4)(D) and shall document its sources and quality of information.

(5) The utility shall describe and document its evaluation of the cost-effectiveness of each potential demand-side program developed pursuant to section (3) and each potential demand-side rate developed pursuant to section (4). All costs and benefits shall be expressed in nominal dollars.

(A) In each year of the planning horizon, the benefits of each potential demand-side program and each potential demand-side rate shall be calculated as the cumulative demand reduction multiplied by the avoided demand cost plus the cumulative energy savings multiplied by the avoided energy cost. These calculations shall be performed both with and without the avoided probable environmental costs. The utility shall describe and document the methods, data, and assumptions it used to develop the avoided costs.

1. The utility avoided demand cost shall include the capacity cost of generation, transmission, and distribution facilities, adjusted to reflect reliability reserve margins and capacity losses on the transmission and distribution systems, or the corresponding market-based equivalents of those costs. The utility shall describe and document how it developed its avoided demand cost, and the capacity cost chosen shall be consistent throughout the triennial compliance filing.

2. The utility avoided energy cost shall include the fuel costs, emission allowance costs, and other variable operation and maintenance costs of generation facilities, adjusted to reflect energy losses on the transmission and distribution systems, or the corresponding market-based equivalents of those costs. The utility shall describe and document how it developed its avoided energy cost, and the energy costs shall be consistent throughout the triennial compliance filing.

3. The avoided probable environmental costs include the effects of the probable environmental costs calculated pursuant to 4 CSR 240-22.040(2)(B) on the utility avoided demand cost and the utility avoided energy cost. The utility shall describe and document how it developed its avoided probable environmental cost.

(B) The total resource cost test shall be used to evaluate the cost-effectiveness of the potential demand-side programs and potential demand-side rates. In each year of the planning horizon-

1. The costs of each potential demand-side program shall be calculated as the sum of all incremental costs of end-use measures that are implemented due to the program (including both utility and participant contributions) plus utility costs to administer, deliver, and evaluate each potential demand-side program;

2. The costs of each potential demand-side rate shall be calculated as the sum of all incremental costs that are due to the rate (including both utility and participant contributions) plus utility costs to administer, deliver, and evaluate each potential demand-side rate; and

3. For purposes of this test, the costs of potential demand-side programs and potential demand-side rates shall not include lost revenues or utility incentive payments to customers.

(C) The utility cost test shall also be performed for purposes of comparison. In each year of the planning horizon—

1. The costs of each potential demand-side program and potential demand-side rate shall be calculated as the sum of all utility incentive payments plus utility costs to administer, deliver, and evaluate each potential demand-side program or potential demand-side rate;

2. For purposes of this test, the costs of potential demand-side programs and potential demand-side rates shall not include lost revenues; and

3. The costs shall include, but separately identify, the costs of any rate of return or incentive included in the utility's recovery of demand-side program costs.

(D) The present value of program benefits minus the present value of program costs over the planning horizon must be positive or the ratio of annualized benefits to annualized costs must be greater than one (1) for a potential demand-side program or potential demand-side rate to pass the utility cost test or the total resource cost test. The utility may relax this criterion for programs that are judged to have potential benefits that are not captured by the estimated load impacts or avoided costs, including programs required to comply with legal mandates.

(E) The utility shall provide results of the total resource cost test and the utility cost test for each potential demand-side program evaluated pursuant to subsection (5)(B) and for each potential demand-side rate evaluated pursuant to subsection (5)(C) of this rule, including a tabulation of the benefits (avoided costs), demand-side resource costs, and net benefits or costs.

(F) If the utility calculates values for other tests to assist in the design of demand-side programs or demand-side rates, the utility shall describe and document the tests and provide the results of those tests.

(G) The utility shall describe and document how it performed the cost effectiveness assessments pursuant to section (5) and shall describe and document its methods and its sources and quality of information.

These estimates shall not be limited by budget constraints that are exogenous to the screening process. In consultation with the Stakeholder Advisory Group, Empire shall incorporate all programs that are found to be cost-effective into at least one alternative resource plan.

**Integrated Resource Plan and Risk Analysis**

13. Empire shall apply the provisions of Paragraph 32 of the Non-Unanimous Stipulation and Agreement to its April 2013 filing by modeling and fully analyzing two demand-side management program portfolios (moderate and aggressive), with a goal of achieving incremental annual electric energy (MWh) and demand savings (MW) equivalent to 1% by 2015 and 2% by 2020.

The basic methodology for calculating these savings levels shall be as follows and may be further clarified and refined as set forth in Table A.1 of this Appendix A.

- (i) For a given reference year, establish the targeted incremental reduction percentage (e.g., a 1% incremental reduction in energy use for the reference year 2015).
- (ii) For years proceeding the reference year, establish a ramp-up rate such that the targeted incremental reduction percentage is reached in the reference year. This ramp-up rate can be derived from several sources, including expert opinion, the experiences of other utilities or outside advice.
- (iii) For years following the reference year, the targeted incremental reduction percentage remains constant at the level established for the reference year unless Empire determines, in consultation with the Stakeholder Advisory Group, that a revision to incremental reduction percentages in the subsequent years is preferable. If revised incremental reduction figures are selected, a clear statement of the rationale and supporting documentation shall be provided in Empire's April 2013 filing.

- (iv) For a given year, the cumulative savings percentage is the sum of that year's incremental savings percentage and the previous year's cumulative savings percentage. Note that this calculation applies to the cumulative percentage reduction, not the cumulative energy reduction or cumulative demand reduction. Calculating cumulative energy and demand reduction requires adjustments for the life of installed measures. Methods for adjustment of cumulative savings will be addressed through the Stakeholder Advisory Group process described in Paragraph 20 of this Appendix.
- (v) To calculate the impact of these targeted savings for use in a candidate resource plan (i.e., over a 20 year planning horizon), extend the incremental savings percentage established in (iii) to the end of the planning horizon and calculate the cumulative savings percentage as in (iv).
- (vi) The incremental and cumulative percentage of reduction in energy use and demand are calculated through simple division as indicated in Table A.1 below. An example illustrating the steps required to calculate percentage incremental and cumulative impact on energy use over a 10-year planning horizon is provided in Table A.1 below.
- (vii) For all calculations of percentage impact, the numerator is based on the utility's baseline "business as usual" weather normalized projection of sales or demand over the planning horizon. These "business as usual" projections are reduced to reflect the impact of demand side resources implemented before the first year of the planning horizon but not further reduced to reflect the

impact of additional demand side resources implemented during the planning horizon.

14. Empire shall document all assumptions, models and other inputs used by Empire or its consultants for developing the analysis and conclusions required to comply with Paragraph 10 and 13 of this Appendix A. Empire shall provide the documentation to the Stakeholder Advisory Group in a format that the members of the Stakeholder Advisory Group have defined as useful and desirable, such as electronically readable spreadsheets, as specified in Paragraph 6 of the Non-Unanimous Stipulation and Agreement.
15. Empire shall consult with the Stakeholder Advisory Group and attempt to reach consensus concerning standard definitions and methodology for estimating maximum achievable potential (MAP) and realistic achievable potential (RAP) for savings from demand-side resources.
16. Empire shall consult with the Stakeholder Advisory Group concerning standards for the reporting of maximum achievable potential (MAP) and realistic achievable potential (RAP), including both energy savings (MWh) and demand savings (MW) across a given reporting or planning horizon. The methodology shall be capable of supporting comparison of the results of Empire's demand-side potential studies to the results of DSM market potential studies in other jurisdictions.
17. Empire shall consult with the Stakeholder Advisory Group and attempt to reach consensus concerning standard definitions and methodology for estimating incremental and cumulative demand-side savings and demand-side impact on base load requirements. Empire shall consult with the Stakeholder Advisory Group



concerning standards for the reporting of incremental and cumulative demand side savings and impact from evaluations, forecasts and potential studies, including both energy savings (MWh) and demand savings (MW) across a given reporting or planning horizon. The methodology shall be capable of supporting comparison of the results of Empire's DSM market potential studies to the results of DSM market potential studies in other jurisdictions.

Table A. 1 Example Calculations of 1% and 2% Savings

	Year										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1% Case Incremental Savings Percentage	0.17%	0.33%	0.50%	0.67%	0.83%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
1% Case Cumulative Savings Percentage	0.17%	0.50%	1.00%	1.67%	2.50%	3.50%	4.50%	5.50%	6.50%	7.50%	8.50%
2% Case Incremental Savings Percentage	0.17%	0.33%	0.50%	0.67%	0.83%	1.00%	1.20%	1.40%	1.60%	1.80%	2.00%
2% Case Cumulative Savings Percentage	0.17%	0.50%	1.00%	1.67%	2.50%	3.50%	4.70%	6.10%	7.70%	9.50%	11.50%
Baseline Forecast (1% growth rate)	1,000	1,010	1,020	1,030	1,041	1,051	1,062	1,072	1,083	1,094	1,105
1% Case Incremental Savings	998	1,007	1,015	1,023	1,032	1,040	1,051	1,061	1,072	1,083	1,094
2% Case Incremental Savings	998	1,007	1,015	1,023	1,032	1,040	1,049	1,057	1,066	1,074	1,083
Baseline Forecast (1.50% growth rate)	1,000	1,015	1,030	1,046	1,061	1,077	1,093	1,110	1,126	1,143	1,161
1% Case Incremental Savings	998	1,012	1,025	1,039	1,053	1,067	1,083	1,099	1,115	1,132	1,149
2% Case Incremental Savings	998	1,012	1,025	1,039	1,053	1,067	1,080	1,094	1,108	1,123	1,137

Table A-2 Anticipated Schedule

Description	2011				2012				2013	
	2nd Qtr (Apr - Jun)	3rd Qtr (Jul-Sep)	4th Qtr (Oct-Dec)	1st Qtr (Jan-Mar)	2nd Qtr (Apr - Jun)	3rd Qtr (Jul-Sep)	4th Qtr (Oct-Dec)	1st Qtr (Jan-Mar)	2nd Qtr (Apr)	
<b>Load Analysis &amp; Load Forecast:</b>										
Draft plan addressing economic variables										
Determine the Feasibility of the inclusion of Economic Variables in Load Forecast										
Award Outside Contract (If required)										
Economic Variable Study										
Initial Load Forecast										
Revised Load Forecast										
Final Load Forecast										
Comparison of the Load Forecast to the Load Forecasts of Other Utilities										
<b>Screening and Integration of Supply-side Resources:</b>										
Determine which Renewable and CHP Supply-side options should be screened										
Determine the scope of Renewable/CHP studies										
Draft Plan to Obtain Info on Renewable and CHP resources										
Draft RFP to Obtain Info on Renewable & CHP resources (if required)										
Issue RFP for Info on Renewable & CHP resources (if required)										
Award contract for Info on Renewable & CHP resources (if required)										
Report on Renewable & CHP resource study										
Review/revise Renewable & CHP study										
Determination of Fuel price assumptions										
Determination of IRP Supply-side waiver requests at the Commission										

Description	2011		2012				2013		
	2nd Qtr (Apr - Jun)	3rd Qtr (Jul-Sep)	4th Qtr (Oct-Dec)	1st Qtr (Jan-Mar)	2nd Qtr (Apr - Jun)	3rd Qtr (Jul-Sep)	4th Qtr (Oct-Dec)	1st Qtr (Jan-Mar)	2nd Qtr (Apr)
Screening & Integration of Energy Efficiency & Demand Response resources:									
Define "Potential" and Scope of Potential Study									
Determine the Methodology to be used in the Potential Study									
Draft RFP for Potential Study									
Issue RFP for Potential Study									
Award Contract for Potential Study (if required)									
Potential Study Analysis and Release of Interim Potential Study Progress Reports (if required)									
Potential Study Final Report (if required)									
Examination of Potential Study results and revisions if required									
Determine the Scope & Design of the Energy Efficiency Programs to be submitted for Commission Approval under MEEIA									
Draft Application for Approval of Energy Efficiency Programs under Commission MEEIA rule									
Submit Application for Approval of Energy Efficiency Programs under Commission MEEIA rule									
Energy Efficiency Program Approval under Commission MEEIA rule									
Periodic Reports to Advisory Stakeholder Group on Energy Efficiency Metrics									
Draft RFP concerning EM&V for Energy Efficiency Programs under Commission MEEIA rule									
Issue RFP for EM&V									
Award Contract for EM&V under Commission MEEIA Rule									
EM&V Report									
Final EM&V Report submitted to Commission for Audit Review									
Commission EM&V Audit Report									
Response to Commission EM&V Audit Report									
Determine Avoided Cost Assumptions									

Description	2011				2012				2013	
	2nd Qtr (Apr - Jun)	3rd Qtr (Jul-Sep)	4th Qtr (Oct-Dec)	1st Qtr (Jan-Mar)	2nd Qtr (Apr - Jun)	3rd Qtr (Jul-Sep)	4th Qtr (Oct-Dec)	1st Qtr (Jan-Mar)	2nd Qtr (Apr)	
Determination of Demand-side waiver requests at the Commission										
Comparison of Empire demand-side results to other utility demand-side results										
<b>Analysis of Uncertain Factors and Risk Analysis:</b>										
Determine what sort of Analysis will be used to Determine Critical Uncertain Factors										
Methodology for Pre-screening and Testing of Uncertain Factors										
Selection of Critical Uncertain Factors										
Aggregation of Critical Uncertain Factors										
Assignment of High & Low Values and Probabilities to Critical Uncertain Factors										
Create Scenarios around Critical Uncertain Factors										
Determination of Risk Analysis waiver requests at the Commission										
<b>Planning Objectives and Contingency Planning:</b>										
Determination of Commission IRP rule requirements on Planning & Contingency Planning										
Determine Planning Objectives										
Draft Resource Acquisition Strategy, Including Contingency Planning										

Note 1: Specific Date and Time of meetings will be determined by the Stakeholder Advisory Group. Meetings shall be shall be guided by Table A-2 but meetings shall be held no less frequently than quarterly.

Note 2: The exact timing of individual process components will vary due to the decisions made by the Stakeholder Advisory Group.